

## **CAMRI ROUNDTABLE DISCUSSION: MEETING SUMMARY** **The Potential for Shared-Use Infrastructure**

**Ms Staci Warden**  
**Executive Director**

**Center for Financial Markets at the Milken Institute**  
**Monday, 11 January 2016**

With the global economy facing headwinds, the need for more efficient capital usage by natural resource companies and governments is creating opportunities for commercial shared-use infrastructure in emerging and frontier markets. Shared-use infrastructure is financed, constructed, owned, and operated independently of its users through a special-purpose vehicle, and backed by at least one investment-grade anchor client. Infrastructure built to support natural resource extraction often can be shared among industry users operating close to one another, and under some circumstances can also be shared with other users, benefiting local industries and communities. Historically, natural resource companies operating in emerging and frontier markets have favored vertically-integrated infrastructure solutions for which they provide most of the capital and over which they maintain exclusive control and use. This contrasts with “open-access” model adopted in developed countries. At this CAMRI Lunch Discussion, Ms Staci Warden shared examples of existing successful shared-use infrastructure in developed and developing markets, her thoughts on why the integrated model is becoming less viable in emerging markets today, the perspectives of the natural resource companies towards shared-infrastructure, as well as the financial and political barriers for the shared natural resource infrastructure model.

### **1. Shared-use infrastructure potential in emerging markets**

The potential for the shared-use infrastructure in emerging markets can be seen in the dichotomy of trillions of dollars of investment needs in these markets against the trillions of dollars of pension assets earning negative rates in global markets today. It is estimated that of the \$11 trillion investment for efficient and reliable extraction of mining and oil and gas resources, \$2 trillion is related to the cost of infrastructure. \$1 to \$3 trillion of this investment is estimated to be required by developing countries –

primarily in Africa. Since the value to weight of bulk commodities is very low, the further away the natural resource the higher the cost of infrastructure required for its extraction. For example, Deutsche Bank has estimated that more than 4,000 kilometers of greenfield railway is required to exploit Africa's iron reserves. Furthermore, the exploration of new sources of mineral wealth cannot take place without an infrastructure solution that is fair and competitive.

Since the long-term horizon of pension assets frees them from the constraints of the liquidity premium, pension funds can improve/enhance performance by matching their asset liability management to an infrastructure asset class. The case for shared-used infrastructure, which pertains mainly to natural resource companies, was outlined by economists based on the natural monopoly argument, while natural resource companies have their own set of arguments against the adoption of shared-use infrastructure.

## 2. Existing models for natural resource exploitation

For a mine, the cost of infrastructure determines how it bases itself on a global cost curve, and pit to port is fundamental to this positioning. As only world class mines are able compete on the global cost curve, the decision to exploit a mine or natural resource is predicated on its infrastructure risk.

### I. Essential facilities doctrine

In the OCED, Sherman Antitrust legislation is regulated on the essential facilities doctrine, which dictates any infrastructure that is a bottleneck infrastructure can be used freely by anyone. Emerging markets which are not regulated by such a doctrine will require a credible public infrastructure model – a good example of this is rail infrastructure in South Africa.

### II. Vertically integrated model

In the exploitation of a resource, mining and natural resource companies are concerned with efficiency, sufficient underutilized capacity, commercial terms and who grants the access rights - when these factors cannot be satisfied they will establish vertically integrated companies. This is more likely when a mine is located in a

remote region, such as BHP's iron ore mine in Western Australia and Rio Tinto's iron ore mine in Quebec.

### **III. Independently operated infrastructure model**

Another model is the independently operated infrastructure model, such as the Aurizon railway in Queensland, Australia, as well as the consortium that runs all of Canada's railways with the exception of Quebec's.

### **IV. Shared-use model**

In the shared-use model, an SPV finances and builds the collateral infrastructure. The mining company owns the mine and serves as a highly credible, investment grade anchor creditor that enables a consortium of other institutional investors to build the facilities (e.g. railways, ports) and run it independently. Typically the debt to equity ratio is around 65% with 5% of bank loans and bonds included. Sometimes the shared-use assets are owned by a consortium of users and disinterested investors. The host government also tends to maintain a golden share to ensure they have adequate voting rights. In addition, there is usually an agreement with an anchor client, and the quality of the anchor client is critical to the bankability of the project. Credit enhancement mechanisms can make the venture more credit worthy, and in some cases the ownership reverts to the government in time.

Shared-use infrastructure can be built under single purpose or multi-user agreements, for instance all mines sharing one railway, or a multi-purpose shared use infrastructure. McKinsey has estimated that of the \$2 trillion of infrastructure assets mentioned earlier, 30% is amenable to multi-purpose sharing arrangements and 70% to like users.

Oil and gas companies are good examples of existing shared-use infrastructure, in Norway the Langeled undersea pipeline is owned by 2 consortiums and several institution investors who also own the pipelines, and similarly for gas fields off the shores of Tanzania and Mozambique – it is hoped this model can be used for offshore oil and gas.

The mining industry is suitable for both single and multi-purpose usage, where the electricity and transportation system required can also form

the backbone of infrastructure for a country. Examples of these are the Richards Bay Coal Terminal in South Africa, while in Brazil, the Train Serra dos Carajás connected to the port in Sao Luis transports 350,000 passengers a year as well as iron ore and other bulk goods. Such ventures create win-win situations for investors, the mining companies and the host country.

### 3. The economic argument against vertically integrated operations

A vertically integrated operations is suboptimal from an efficiency and utility point of view for the following reasons:

- a. It is a network mode, so the scale economies implies unified ownership, which in turn implies a natural monopoly, which ideally should be under public ownership or regulated.
- b. Until the port and railway facilities have been built, the future operations cannot be activated. This means the exploitation of other possible mining fields will not be explored for natural resources potential without an understanding the cost of getting the natural resources to the port. As such, if the firm holds a monopoly it will hold up not only other companies, but also future exploration activities, because once a mining firm sinks costs into exploration, other firms can extract all the rents from the entire sunk costs of the initial firm's development costs. Since all mining companies are aware of this, they simply avoid exploration costs.
- c. The unregulated monopoly rights extract resource rents that should otherwise accrue to the state. If a firm bids on the concession, the negotiated transport price with the railroad owner forms the cost basis of the bid, and the railroad owner extracts the rents that would go to the state. This preempts the state's resource rents from that bid. If the first mover mine (owner of railroad) wants to bid, they would be the only credible bidder, and have no incentive to pay but a token amount for the explicit rights to known deposits and implicit rights to all the unknown potential deposits.

### 4. Benefits of the shared-use model

#### I. Benefits to consumers

- a. At Singapore's shared regasification plant the tariff lock translated directly into lower gas prices for consumers. From this, we can see that when there is an immediate, direct link to consumers, countries tend to benefit more. In contrast, gas companies in Chile owning the regasification companies and consumers are subject to much higher gas prices.

## **II. Impartiality of benign third-party operators**

- a. In the North Sea, the pipelines are owned by a consortium and run by a state owned enterprise, which as a benign third-party operator has just reduced the pipeline tariff in light of the fall in oil prices.

## **III. Benefits to investors**

- a. Allowing local users access to the railroad dramatically decreases the government's ability to appropriate the railway and helps mitigate political risk.
- b. Emerging market risk can be reduced by the participation of a highly credit worthy, highly reliable, investment grade, G3 currency earning client that is highly dependent on the infrastructure.
- c. Allows for accrual of the true rents deserved by the government.

## **5. Conclusions and issues for discussion**

- a. Negotiating a treaty is difficult for governments because the value of the natural resources is unknown. There is also a time lag of about 10 years between the writing of concession agreements and when building commences. The Milken Institute is in the process of developing a set of principles on shared-use, similar to the Equator Principles, which would be included into concession agreements that governments can then refer to later.
- b. Lack of shared-use adoption results in increased capex costs for operators and drains resources from local communities, for example mines in Chile which had been depleting water supplies from the local village, are now in each the process of building water desalination plants because they each want their own.

- c. Environmental degradation can be extremely high when several vertically integrated models are built alongside each other, such as seen in the case of the Pilbara Rail access dispute, which resulted in each mining company building their own integrated railroad and port facilities for the transport of iron ore.
- d. Mining companies are not accepting towards the shared-use model, using the following methods to challenge every step and action towards:
  - Building facilities engineered with proprietary technology
  - Putting forth arguments that assets built are not considered infrastructure and instead are part of the mine
  - Making preemptive access arrangements with fictitious companies
  - Designing the assets so that only the absolute minimum capacity is possible
  - Trying to buy small companies up

## 6. Other issues discussed in the talk

- I. Other sectors to which shared-use models may be applicable, particularly in the Asian context
- II. The current broad trend towards deregulation globally, which has been hugely beneficial to consumers, contrasted against the legislative case for shared-use models
- III. Tax morality issues and potential lessons from the Panama canal project
- IV. Problems associated with natural monopolies
- V. Examples within China